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ABSTRACT

This directory of information centers, selected abstracting and indexing publications, and a discussion of journal capabilities and limitations has been prepared by the Hazardous Materials Advisory Committee of the Environmental Protection Agency. For selected information resources, each of the 20 entries includes name and location of the organization, telephone number, scope of services offered, and special programs conducted at or through its facilities. Section 2, selected abstracting and indexing publications, lists 31 journals applicable to pesticides, environmental health, and hazardous materials. The final section discusses the advantages and limitations of nine abstracting and indexing journals with regard to pesticide information. (BL)

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INFORMATION RESOURCES

in

PESTICIDES,

ENVIRONMENTAL HEALTH

and

HAZARDOUS MATERIALS

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INFORMATION RESOURCES IN PESTICIDES, ENVIRONMENTAL HEALTH AND HAZARDOUS MATERIALS

The following list of information centers, selected abstracting and indexing publications, together with a discussion of their capabilities and limitations has been prepared. An evaluation of the publication suggested by the Davis Pesticide Clearinghouse proposal is included.

A. Selected Information Resources

1. National Library of Medicine
   8600 Rockville Pike
   Bethesda, Maryland 20014

   Telephone: 301-496-6095

   This Library answers technical questions, assists in literature searches, and lends materials on an interlibrary loan basis. It publishes the monthly Index Medicus, a listing of the world periodical literature of the biomedical sciences, covering 150,000 items each year and is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402.

The Library has developed the Toxicology Information Program. A computer based program called TOXICON is designed to respond to the information needs in areas of environmental health, occupational health, pharmacology toxicology, medicine, and agriculture. Director of the program is Dr. Henry M. Kissman. Utilizing terminal devices connected to TOXICON through any regular telephone. A subscriber can conduct an immediate search of computerized toxicology data base compiled and maintained by the Library. The TOXICON network already has entry points in 40 U.S. cities. A subscriber within the local calling area of one of these entry points can contact the network without incurring toll changes.

2. Division of Technical Information Extension
   U.S. Atomic Energy Commission
   P.O. Box 62
   Oak Ridge, Tennessee 37831

   Telephone: 615-483-8611

   The DTIE is responsible for the acquisition, organization, reproduction, and dissemination of scientific information in support of AEC research and development, civilian application, weapons, international cooperation, and educational assistance programs. The semimonthly Nuclear Science Abstracts, published by the AEC, is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402.

A Toxicology Information Response Center has been created at the biology division of Oak Ridge National Laboratory, Oak Ridge, Tenn., to store and

disseminate information on the toxicology of pesticides and other potentially hazardous chemicals in the environment.

The center is a part of the toxicology information program of the National Library of Medicine, and is under the direction of Dr. David G. Doherty. It provides a machine readable data base on toxicology information, including bibliographies, laboratory test results, chemical structures, residues, effects on man and his food chain, and sources, methods, and quantities of application.

The data base will be updated continously as information on new compounds is developed. The center eventually will contain information on other aspects of toxicology, such as drug interaction and adverse effects.

The center provides literature searches, specialized bibliographies, critical reviews, state-of-the-art reviews, and selected dissemination of information to interested persons.

3. Science Information Exchange
   209 Madison National Bank Building
   1730 M Street, N. W.
   Washington, D. C. 20036

   Telephone: 202-381-5511

   The SIE is a clearinghouse for research in progress in the life, physical, and social sciences. Questions are answered by a staff of scientists. Services are provided for a fee to research investigators and administrators associated with recognized research institutions.

4. Chemical Abstracts Service
   American Chemical Society
   2041 North College Road
   Columbus, Ohio 43210

   Telephone: 614-293-5022

   This service provides answers to technical questions and performs literature searches. Fees vary according to the nature and complexity of the request. It prepares Chemical Abstracts, a biweekly, published and sold by the American Chemical Society, 1155 16th Street, N. W., Washington, D. C. 20006.

5. National Agricultural Library
   U.S. Department of Agriculture
   Beltsville, Maryland 20702

   Telephone: 202-388-3434

   This Library answers questions and provides references within its time available for free service. The Library lends monographs on an interlibrary loan basis and sells photoreproductions of its

holdings. Library Lists, subject bibliographies prepared as an aid to Department programs, are available for free limited distribution. It prepares computer tapes for the Bibliography of Agriculture, which is published and sold monthly by the CCM Information Corporation, 909 Third Avenue, New York, N.Y. 10022.

6. The John Crerar Library
35 West 33rd Street
Chicago, Illinois 60616

Telephone: 312-225-2526

This Library, which is open to the public, maintains comprehensive English and foreign language collections in the physical and biological sciences and their applications in engineering, medicine, and agriculture and provides on-site reference service. Bibliographical searches, abstracting current reporting and prior art searches are performed on a fee basis. Photocopies of library owned materials are available. Translating services as well as copies of translated technical material from the National Translations Center are also available for a fee.

7. Office of Hazardous Materials
U.S. Department of Transportation
400 6th Street, S. W.
Washington, D. C. 20590

Telephone: 202-426-0656

Provides information and consultation. Prepares specifications which are published in the Code of Federal Regulations.

8. Hazardous Materials Division
Office of Merchant Marine Safety
U.S. Coast Guard
400 7th Street, S. W.
Washington, D. C. 20591

Telephone: 202-426-2300

Answers questions and makes referrals. Establishes, publishes, and enforces regulations. Publishes a Chemical Data Guide for Bulk Shipment by Water.

9. Office of Oil and Hazardous Materials
Water Quality Office
U.S. Environmental Protection Agency
1921 Jefferson Davis Highway
Arlington, Virginia 22202

Telephone: 703-557-7660

Provides information on the Government's role in the safe handling

of hazardous materials. Requests should be addressed to Mr. Kenneth Biglane.

10. Oil and Hazardous Material - Technical Assistance Data System (OHM-TAD)
Battelle Northwest Laboratory
Battelle Boulevard
Richland, Washington 99352

Telephone: 509-942-1111

Collects and provides information and data. Inquiries should be addressed to the Director, Dr. A. J. Shuckrow.

11. Oil Spill Information Center
Sciences-Engineering Library
University of California at Santa Barbara
Santa Barbara, California 93106

Telephone: 805-961-3948

Serves as clearinghouse for information on oil spills. Maintains a registry of experts. Permits onsite use of the collection.

12. American Petroleum Institute
1801 K Street, N. W.
Washington, D. C. 20006

Telephone: 202-833-5600

Maintains a library for reference and document services. Publishes: Drilling and Production Practice, annually; Petroleum Today, quarterly; API Abstracts of Refining Patents; statistical materials; Toxicological Reviews and other pertinent materials. The Institute's Divisions provide consulting services and further guidance.

13. Division of Operational Safety
U. S. Atomic Energy Commission
Washington, D. C. 20545

Telephone: 301-973-4138

Provides information and consultation on matters related to health protection, nuclear explosives environmenal safety, nuclear facilities, reactor safety, industrial safety, fire protection, and pollution control.

14. Isotopes Information Center
Oak Ridge National Laboratory
P.O. Box X
Oak Ridge, Tennessee 37830

Telephone: 615-483-8611 Ext. 1742

Provides information on stable and radioisotopes, including production and utilization.

15. National Fertilizer Development Center
U. S. Tennessee Valley Authority
Muscle Shoals, Alabama 35660

Telephone: 205-383-4631

Provides reference, document and consulting services as time permits. Its Technical Library publishes Fertilizer Abstracts.

16. Information Unit
Division of Community Studies
Environmental Protection Agency
4770 Buford Highway
Chamblee, Georgia 30341

Telephone: 404-633-3311 Ext. 5201

Assesses the total impact of pesticides upon human health. Collects and disseminates information on environmental health research. Publishes Health Aspects of Pesticides Abstracts Bulletin and its Pesticides Monitoring Journal.

17. Injury Data Control Center
Bureau of Product Safety
U.S. Food and Drug Administration
5401 Westbard Avenue
Bethesda, Maryland 20016

Telephone: 301-496-7681

Provides information and consulting services in accordance with regulations.

18. Consumer Research, Inc.
Washington, New Jersey 07882

Telephone: 201-689-3300

Answers questions and permits onsite use of collection by approved scientific, academic and Government researchers by appointment. Lends for a fee slides to teachers, educational organizations and civic groups. Publishes Consumer Bulletin, monthly and annually.

19. Industrial Health Foundation, Inc.
5231 Centre Avenue
Pittsburgh, Pennsylvania 15232

Telephone: 412-687-2100

A central data repository in the fields of environmental and occupational health research, including industrial hygiene related to aerosols, carcinogens, dusts, fumes, gases, hazardous chemicals, inhalation, absorption, irritants, environmental pollutants, employee mental health, etc. Answers inquiries on a limited basis to nonmembers.

20. Scientific Reference Service
National Institute of Occupational
Safety and Health (HSMHA)
1014 Broadway
Cincinnati, Ohio 45202

Telephone: 513-381-2200 Ext. 2692

Provides answers to technical inquiries on the toxicology and hazards of industrial materials and conditions, control of hazards, injurious effects on health, prevention and treatment, to include the medicinal and physiological aspects of occupational health hazards. No fees are charged for services or material; however, the staff cannot undertake extensive searches or compilations due to small staff.

B. Selected Abstracting And Indexing Publications

Bibliography of Agriculture, published by CCM Information Corporation, 909 Third Avenue, New York, New York 10022 from data provided by the U.S. National Agricultural Library. Monthly. Retrospective issues (prior to 1970) available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402.

Biological Abstracts, published and sold by Biological Abstracts, 2100 Arch Street, Philadelphia, Pa. 19104. Semimonthly.

Biological and Agricultural Index, published and sold by the H.W. Wilson Co., 950 University Avenue, Bronx, N.Y. 10452. Monthly except Sept.

Bioresearch Index, published and sold by Bioscience Information Service of Biological Abstracts, 2100 Arch Street, Philadelphia, Pa. 19103. Monthly.

Chemical Abstracts, published and sold by the American Chemical Society, 1155 16th Street, N. W., Washington, D. C. 20006. Biweekly.

Current Bibliography for Aquatic Sciences and Fisheries, published for the Food and Agricultural Organizations of the United Nations by Taylor and Francis, Ltd. 10-14 Machlin St., London WC 2, England. Annually.

Current Index to Conference Papers in Life Sciences, prepared by World Meetings Information Center, published and sold by CCM Information Corp., 909 Third Avenue, New York, N.Y. 10022. Monthly.

Dissertation Abstracts International, published and sold by Dissertation Abstracts, 300 North Zeeb Road, Ann Arbor, Michigan 48106. Monthly.

Excerpta Medica, published and sold by the Excerpta Medica Foundation, 119-123 Herengracht, Amsterdam, The Netherlands. In the United States: Excerpta Medica, New York Academy of Medicine, Building 2, 2 East 103rd Street, New York, N.Y. 10029.

There are 28 Sections: I. Anatomy, anthropology, embryology, and histology. II. A. Physiology; B. Biochemistry; C. Pharmacology and toxicology; III. Endocrinology; IV. Microbiology; V. General pathology and pathological anatomy; VI. Internal medicine; VII. Pediatrics; VIII. A. Neurology and neurosurgery; B. Psychiatry. IX. A. Surgery; B. Orthopedic surgery; X. Obstetrics and gynecology; XI. Oto-, rhino-, and laryngology; XII. Ophthalmology; XIII. Dermatology and venereology; XIV. Radiology; XV. Chest disease, thoracic surgery, and tuberculosis; XVI. Cancer; XVII. Public health, social medicine and hygiene; XVIII. Cardiovascular diseases and cardiovascular surgery; XIX. Rehabilitation and physical medicine; XX. Gerontology and geriatrics; XXI. Developmental biology and teratology; XXII. Human genetics; XXIII. Nuclear medicine; XXIV. Anesthesiology; XXV. Hematology; XXVI. Immunology, serology, and transplantation; XXVII. Medical instrumentation; XXVIII. Urology and nephrology.

Health Aspests of Pesticides, published by Division of Pesticide Community Studies of the Environmental Protection Agency, 4770 Buford Highway, Building 29, Chamblee, Georgia 30341. Sold by Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402. Monthly and Quarterly.

Horticultural Abstracts, published and sold by the Commonwealth Agricultural Bureaux, Farnham Royal, Bucks, England. Quarterly.

Index Medicus, published by the National Library of Medicine. Sold by the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402. Monthly.

Index veterinarius, published and sold by the Commonwealth Bureaux of Animal Health, Weybridge, Surrey, England. Quarterly.

Nutrition Abstracts and Reviews, published and sold by the Commonwealth Agricultural Bureaux, Farnham Royal, Bucks. England. Quarterly.

Zoological Record, published and sold by the Zoological Society of London, Regent's Park, London, N.W. 1, England. Annually.

Chemical Abstracts, published and sold by the American Chemical Society, 1155 16th Street, N.W., Washington, D. C. 20006. Biweekly.

Current Index to Conference Papers in Chemistry, prepared by World Meetings Information Center, published and sold by CCM Information Corp., 909 Third Avenue, New York, N.Y. 10022. Monthly.

Deep Sea Research and Oceanographic Abstracts, published and sold by Journals Div., Pergamon Press, Maxwell House, Fairview Park, Elmsford, N.Y. 10523. Bimonthly.

Engineering Index, published and sold by Engineering Index, Inc., 345 East 47th Street, New York, N.Y. 10017. Monthly

GeoScience Abstracts, published by the American Geological Institute, 1444 N Street, N. W., Washington, D.C. 20009. Monthly.

Metals Abstracts, published and sold by the Institution for Metals and the American Society for Metals, Metals Park, Ohio 44073. Monthly.

Meteorological and Geoastrophysical Abstracts, published and sold by the American Meteorological Society, 45 Beacon Street, Boston, Mass. 02108. Monthly.

Nuclear Science Abstracts, published by the U.S. Atomic Energy Commission. Semimonthly. Sold by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Oceanic Citation Journal, published and sold by Pollution Abstracts, Inc. 6811 La Jolla Blvd., P.O. Box 2369, La Jolla, Calif. 92037. (6 times/yr.)

Petroleum Abstracts, published and sold by Information Services Department, University of Tulsa, Tulsa, Okla. 74110. Weekly.

Physics Abstracts (Science Abstracts, Section A), published by the Institution of Electrical Engineers, P.O. Box 7, Southgate House, Stevenage, Herts, England, and the American Institute of Physics, 335 East 45th Street, New York, N.Y. 10017. Monthly.

Pollution Abstracts, published and sold by Pollution Abstracts, Inc., 6811 La Jolla Blvd., P.O. Box 2369, La Jolla, Calif. 92037. 6 times/yr.

Science Citation Index, published by the Institute for Scientific Information, Inc., 325 Chestnut Street, Philadelphia, Pa. 19106. Quarterly.

Selected Water Resources Abstracts, published by the Office of Water Resources Research, U.S. Department of the Interior, for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Va. 22151. Monthly.

U.S. Government Research and Development Reports, published and sold by the National Technical Information Service, U.S. Department of Commerce, Springfield, Va. 22151. Semimonthly.

U.S. Government Research and Development Reports Index, published and sold by the National Technical Information Service, U.S. Department of Commerce, Springfield, Va. 22151. Monthly.

C. The Discussion of Advantages Limitations of the Abstracting and Indexing Journals with Regard to Pesticide Information as follows:

1. Chemical Titles (CT). It covers 650 journals and is issued every two weeks. In 1968 CT included about 126,000 titles. The information is current and concerned primarily with the chemical aspects of pesticides. Its search capability depends entirely on the keywords appearing in the title of an article.

2. Chemical-Biological Activities (CBAC). This service offers current, fair coverage of published work concerning the interaction of organic compounds (pesticides, drugs, etc.) with biological systems (man and other animals, plants, microorganisms, etc.). "Included also are metabolism studies and studies in vitro chemical reactions of biochemical interest." Nearly 600 journals are monitored regularly. In 1968, approximately 18,000 papers were covered.

   A very important and useful feature in the CBAC is the inclusion of a CAS Registry Number for the organic compounds. This number is assigned by computer after input of the chemical structure and links the structure with nomenclature and bibliography files. It also serves as an efficient search tool because it provides a unique identification of a compound, even if it has many trivial names, as in the case of pesticides.

   The usefulness of this tape for pesticide SDI service is limited because of the following factors:

   a. It has no generic searching capabilities. This is substantiated by our own search result.

   b. Its data base is limited to organic chemicals only. Inorganic, such as arsenicals, mercury, lead, etc., are not included.

   c. Its information concerns the interaction of organic compounds with biological systems only. Environmental and ecological aspects of pesticides are not included.

   d. Pesticides chemistry and residue analysis are not covered.

   e. Its criteria for selection of pesticide articles are not clear.

3. Chemical Abstracts (CA). This publication needs no introduction. Pesticides information on chemistry, analysis, residues, metabolism and toxicology is provided primarily in three sections:

Sect. 10 - Foods (Residues and tolerance in foods).
Sect. 17 - Plant growth regulator (Herbicides).
Sect. 18 - Pesticides (Insecticides, fungicides, acaricides, rodenticides, etc.).

Since 1968, magnetic tapes containing all sections of CA (CA-Condensates) are available for machine searching. Its usefulness for pesticide SDI service is limited by the following factors:

a. It is a publication intended for chemists. Even with the expanded coverage into other disciplines, the information it covers is by and large chemically-oriented. There is a tendency to avoid duplication of efforts between Chemical Abstracts Service (CAS) and BioScience Information Science and Biological Abstracts. (BIOSIS).

b. CA is used for retrospective searching purposes and not intended as a current awareness tool, because of time-lag (at least 4-6 months for U.S. publications).

c. The CAS Registry Number is not included in the data-base of CA-Condensates. It means that one has to list all possible names of a particular pesticide in the search profiles in order to obtain a high percentage of recall. This is both time-consuming and expensive.

d. Like all other CA computer-based services, CA-Condensates has no generic capabilities. One can obtain satisfactory search results with specific compound names only.

e. The coverage on environmental effects of pesticides and to a certain extent the medical aspects of pesticidal actions are not adequate.

However, one of the major advantages of scanning CA for obscure sources of pesticide information is its excellent coverage on Russian literature. CAS also can make the original articles available through its photocopying service.

4. Biological Abstracts (BA). This service has perhaps the most comprehensive coverage on biological aspects of pesticides. In 1967, it covered more than 5, 000 papers selected from some 7,000 journals. It has the following limitations:

a. Its coverage on chemistry and analysis of pesticides is less than adequate primarily because this publication is intended for workers engaged in biological sciences research.

b. Its greatest drawback is the "time-lag" problem. Information from U.S. publications are 6 months late.

c. The "Cross Index" is very cumbersome to use.

d. Pesticide information is scattered among various sections. It makes searching rather difficult and time consuming.

e. The newly introduced CLASS (Current Literature Alerting Search Service) is the name of BIOSIS' new SDI service. It is a product of computer processing, based on BA Previews, the semi-monthly magnetic tape service of BIOSIS. How current and how effective is maching searching for pesticide information remains to be studied.

f. Biological Abstracts, like CA, is intended for retrospective search and not for current awareness purposes.

5. Index Medicus (IM).

a. IM provides very limited access to both environmental and legal aspects of pesticides since its major interest is the biomedical sciences.

b. IM does not provide abstracts with the citations.

c. IM does not provide coverage for patent literature and manufacturers' technical data sheets.

d. MESH headings are too general for persons in need of information requiring greater specificity. For instance, there are only eight pesticide chemicals specifically identified with other general subject headings in Category D3 in MESH (benzene hexachloride, chlordan, DDT, dieldrin, hexachlorophene, parathion, pyrethrum, rotenone).

e. Since MEDLARS is biomedically-oriented, its coverage on pesticides would not be expected to be comprehensive.

6. Pesticides Documentation Bulletin (PDB). This Bulletin was compiled by the Pesticides Information Center (PIC) of the National Agricultural Library (NAL). It covered all aspects of pest control. The files of the Bulletin and its vocabulary were available on magnetic tapes for the IBM-360 series computer. The usefulness of this Bulletin suffered from the following limitations:

a. This was an enormous file, the system was written in COBOL and has no inverted file. It was very time-consuming and expensive to search by computer.

b. The selection criteria for articles to be included in the Bulletin was something to be desired. The Bulletin included many items which were obviously of no interest to pesticide research. A great deal of information concerned taxonomy of diseases, weeds, and insects, genetics, pathology of diseases, etc.

c. The emphasis was on pest control in agriculture and veterinary sciences. The environmental aspects were not adequately covered.

d. There was a delay in the publication of PDB.

e. The publication of PDB was discontinued effective January 1970.

7. Pestdoc. This is one of Derwent Publications services published in London. The information is presented in several forms: abstract journal, classified booklets, indexed cards and magnetic tapes. Its usefulness in computerized SDI service is limited at present because:

   a. The magnetic tape is available on quarterly basis for IBM-360 series computer.

   b. Its most current service is the weekly classified booklet available in printed issues only.

   c. Pestdoc covers by and large the agriculturally-oriented pest control information.

   d. While the toxicology and chemistry sections of pesticides are adequately covered, the medical and environmental aspects are not.

8. Health Aspects of Pesticides Abstract Bulletin (HAPAB). This is the official publication of the Pesticides Program, EPA. Its purpose is "to foster current awareness of the major worldwide literature pertaining to the effects of pesticides on humans". This publication "represents a monthly review of more than 500 domestic and foreign journals". Its limitations are:

   a. Although it was intended to have machine search capability, magnetic tapes are not yet available because of programming problems.

   b. It is basically an abstracting journal designed for those public health workers in the country who have limited or no access to library resources. Information here is much more current than BA, PDB or CA-Condensates.

   c. Its coverage on environmental aspects of pesticides is limited.

   d. No subject index is provided with the monthly issue.

9. Pesticide Information Alert (PIA) is the proposed publication of the Food Protection and Toxicology Center, University of California at Davis. The publication of this journal would overcome the deficiences with the Health Aspects of Pesticides Bulletin which will be pointed out. (1) The operation leading to the publication of the present bulletin is a manual operation so that there is no possibility to generate indices by computer nor to use the data base at a later time as a source for retrospective search. We believe that each issue of the bulletin should include indices of several types: an index to the specific chemicals, either by name or by a line notation, or both, a general subject index, and possibly an author index. Not only would

computer-based procedures for the generation of the indices for the bulletin be desirable, but the capture of all of the information included in the bulletin in machineable form would permit the computer-controlled photocomposition of the bulletin. (2) Approximately 2,000 abstracts per year are included in this bulletin. The Davis proposal calls for the generation of approximately 10,000 abstracts per year, as well as the computer-based publication of them.

The Davis publication would identify, select, abstract, index, computerize, retrieve and dessimate pertinent pesticide information to meet national needs in health, environment and legal areas. The proposed publication, PIA, would provide information to pesticide workers throughout the United States. It would include unique features of the CAS. Registry Numbers and Wisweeser Line Notation System in order to provide valued searching and delivery of information.